



# CLIMATE ACTION

*Adapting to Change,  
Protecting Our Future*

2011





## Message from the Minister of the Environment

I am pleased to report that Ontario is making real progress on some of the world's most pressing climate change issues. We are taking a proactive approach because we understand that a healthy environment is critical to creating a cleaner, stronger, more sustainable future for all Ontarians.

We are phasing out dirty coal-fired electricity — the single largest greenhouse gas reduction initiative in North America. We are investing in clean, renewable sources of energy and creating more jobs for Ontarians.

The effects of climate change are already here and having an impact on our everyday lives — we are seeing more frequent and intense weather events, shorter duration of ice cover on lakes and fluctuating water levels in our lakes, rivers and streams. Environment Canada deemed 2010 the hottest year on record.

Climate change is an issue that affects every continent, country, community and individual. There is no doubt the global community as a whole must do more. That is why Ontario is taking strong, immediate action now so our children and our grandchildren inherit a healthy environment and a strong economy in decades to come.

We are moving quickly and in the right direction. Ontario has a plan, but we all have a shared responsibility to make a difference. Often the most lasting change comes from the community, from grassroots organizations and from within our own homes; from ideas generated around the dinner table.

Ontario is responding to the climate change challenge in two ways. We are taking action to reduce greenhouse gas (GHG) emissions, while at the same time adapting by taking steps to deal with a changing climate and the challenges it presents both now and in the long term. This report brings together two major climate initiatives — Climate Progress: Ontario's Plan for a Cleaner, More Sustainable Future and Climate Ready: Ontario's Adaptation Strategy and Action Plan.

I invite you to read on and learn more about climate change and our efforts to respond and adapt, while building a cleaner, greener and healthier Ontario.

A handwritten signature in blue ink that reads "John Wilkinson". The signature is fluid and cursive, with a large loop at the end of the last name.

**John Wilkinson**  
*Minister of the Environment*



## CLIMATE CHANGE: THE DEFINING CHALLENGE OF OUR TIME

Over time, individuals have risen to meet extraordinary challenges for a better way of life for future generations.

Now it is our turn. But the challenge we face is different. Through our very way of life, over many years, we have altered our climate forever. The signs of change are all around us. It has already started to affect every living being on the planet.

Rainstorms and floods have always been a fact of life in Ontario. So have droughts and heat waves, winter storms, tornadoes and windstorms. These events used to happen rarely. Now, they are becoming more common.

They are clear signs of a powerful shift in our weather patterns. This shift is called 'climate change.' It threatens our health and safety, our environment and our economy.

**DID YOU  
KNOW?**

**↑ 1.4°**

The average temperature in Ontario has gone up by as much as 1.4 degrees Celsius since 1948. That may sound like a small change but it is often linked to extreme weather because warmer air holds more moisture that can cause severe weather events.

# HOW IS ONTARIO'S CLIMATE CHANGING?

## HERE ARE JUST SOME OF THE WAYS OUR WEATHER IS CHANGING AND HOW IT IS AFFECTING US.

**Our summers are warmer, with more heat waves.** In Southern Ontario, the number of days over 30°C will likely more than double by 2050. That's not all. Science projects that by 2050, the average annual temperature in Ontario may increase by 2.5°C to 3.7°C (from a baseline average temperature taken between 1961 and 1990) (Environment Canada, 2009). The greatest change will likely take place in the far north, in winter.

Some people may see this trend as a good thing, but heat waves can be serious, and even deadly. Many people — especially babies and seniors — can suffer from heat stress. The hot summer sun can also trigger smog. For some of us, this makes it hard just to breathe.

**Our winters are warmer, with fewer extreme cold days and less snow overall.** It is creating shifts in the balance between winter and summer outdoor activities. This, in turn, is affecting our tourism and recreation industries.

Warmer winters will make it more difficult for wildlife and people in the far north — including First Nations — to adapt. Remote communities are losing their winter roads. Parts of these roads are built over frozen rivers, lakes and wetlands. Fifty years ago, some of them were open as early as December and stayed frozen until April. Now, in some winters, this has been cut back to as little as three weeks.

Some of the most dramatic changes have already started near the coast of Hudson Bay and James Bay. Warmer temperatures are causing the loss of permafrost. As this happens the local landscape changes, as well as the stability of houses and buried water pipes.

**We are seeing more intense and severe storms.** The Vaughan tornadoes were one of the costliest extreme weather events of 2009. The Insurance Bureau of Canada estimated costs of more than \$76 million for this single day event.

Floods are causing more damage too. A state of emergency was called after the Peterborough flood of 2004. The violent rainstorm in August 2005 that washed out Finch Avenue in Toronto caused damages resulting in almost \$550 million in insurance claims alone. The flooding broke two gas lines and a drinking water pipe. It took out telephone, hydro and cable lines and flooded more than 4,200 basements.

The story is the same across Ontario. Flooding is now the number one reason for household insurance claims in Ontario.

**Our farmers are also affected.** Many have dealt with droughts, including one that lasted from mid-1997 until April 2000. Extreme weather damages crops through hail and flooding. While milder winters can reduce heating bills for livestock barns, they help some pests and diseases survive the winter, while others spread further across Ontario. This poses a threat to our economy and potentially our food supply.

### DID YOU KNOW?



**More than 70 per cent of people in the province depend on the Great Lakes for their drinking water. With warmer winters and less ice cover, and hotter summers, the water levels in the Great Lakes are dropping. Water levels in Lakes Superior, Michigan, Huron and Erie are currently below their 100 year average.**

We are not alone in feeling the effects.  
Climate change affects every living thing  
in the world around us.

**DID YOU  
HEAR ABOUT  
THE GREAT ICE  
STORM OF 1998?**



Extreme weather shifts caused one of Canada's greatest natural disasters in January 1998. An ice storm took down power lines across a large area of eastern Ontario. It knocked down almost a million trees. Airports were closed. States of emergency were declared. Some people were without power and heat for weeks.

**The growing season is changing for plants. Habitats are changing for insects, animals, birds and fish. Almost 200 of Ontario's wild species are now at risk. These will either have to adapt or disappear.**

Think of the polar bears. As the winter ice forms later and melts earlier, polar bears can't hunt seals for as long as they used to, reducing their spring body weight and threatening their survival in Hudson Bay. Warm water fish are replacing cold water species in our sports fisheries. Animals like the white-tailed deer are moving further north. Birds are migrating earlier.

Our forests are also changing. Ontario's forests cover about two-thirds of our province. We are now seeing shifts in seasonal growing conditions and more pervasive insect attacks. With drier forest floors, fires from lightning strikes happen more often. The mix of trees we have is slowly changing — which in turn will affect our forestry industry and our wildlife.

These changes will alter the future of every living thing in the world around us. That's why it's so urgent and so needed that we all work together now to protect our way of life and our future.

## WHAT IS CAUSING OUR CLIMATE TO CHANGE?

Recent changes in the earth's temperature cannot be fully explained by natural factors. There is little dispute that greenhouse gas (GHG) emissions from human activity play an important role in climate change.

These gases come from our homes and businesses, from our gas-powered vehicles, and from our coal-burning electricity plants. This means we can all take steps — big and small — to reduce emissions. If we continue

to release as much GHG into the atmosphere as we do today, we will increase the risk of dangerous impacts from climate change in countries around the world, including Canada.

# WHAT IS ONTARIO DOING ABOUT CLIMATE CHANGE?

As the world around us continues to change, we need to respond. Action is possible now — and Ontario is not sitting back and waiting.

Ontario is leading the way in several key areas. Our actions are guided by two important principles:

## 1. Focus on the cause of climate change greenhouse gas (GHG) emissions.

If we don't, the problem will only get worse. Ontario has programs and strategies in place to reduce our GHGs. Including initiatives launched to date, current forecasts show that we will deliver more than 85 per cent of the reductions needed to meet our 2014 targets.

To learn more, read [Climate Progress: Ontario's Plan for a Cleaner, More Sustainable Future](#).

## 2. Protect our province from the harmful effects of our changing climate.

Climate change will affect everyone. That is why Ontario is taking prudent steps to protect our health, our economy, our communities, and our way of life.

To learn more, read [Climate Ready: Ontario's Adaptation Strategy and Action Plan](#).

### OUR VISION FOR A CLEANER, MORE RESILIENT ONTARIO

**We are working to create an Ontario that is:**

- Prepared for the impacts of climate change.
- Recognized as a world leader in reducing greenhouse gas emissions through the use of clean, renewable energy, as well as energy and water conservation.
- Able to protect our water, lands and forests to sustain all forms of life and support human uses and enjoyment.
- Mobilized to build a smarter, more efficient and sustainable transportation system for the future.

## HELP US BUILD A GREENER ONTARIO:

# 10 SIMPLE STEPS

We are all touched by climate change. We can all be part of the solution. Here are 10 simple steps you can take to help reduce emissions and adapt to climate change:

**1** Take public transit, walk, rollerblade or cycle.



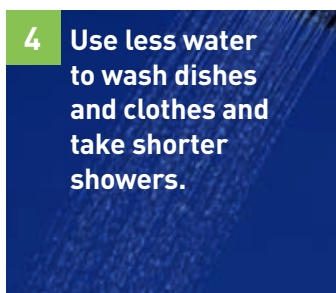
**2** Keep your vehicle maintained, watch your speed and reduce idling time.



**3** Turn down the heat or air conditioning when you're not home.



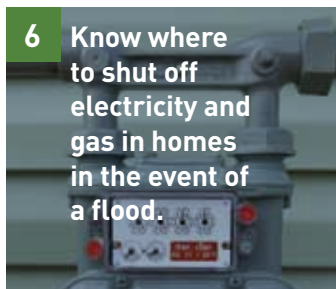
**4** Use less water to wash dishes and clothes and take shorter showers.



**5** Protect your home from flooding (for example, using backflow valves).



**6** Know where to shut off electricity and gas in homes in the event of a flood.



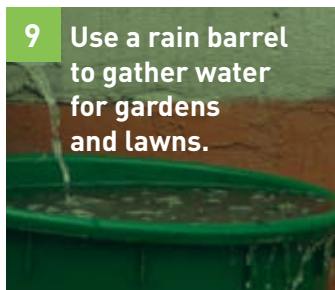
**7** Pay attention to air quality advisories and heat alerts.



**8** Create an emergency kit with enough supplies to support your family and pets for 72 hours.



**9** Use a rain barrel to gather water for gardens and lawns.



**10** Install a low-flush toilet.





# LEADING THE WAY: ONTARIO'S ACTIONS ON CLIMATE CHANGE

**Ontario has been working with experts to:**

- Understand the impacts of our changing climate
- Take action to reduce or adapt to the negative effects of those changes
- Capture any opportunities these changes may bring.

On the pages that follow, you will find just a few examples of the many steps the Ontario government is now taking to meet the challenges of our changing climate. Your government will report each year on our progress. Through our policies and programs, we can — and will — work to help prepare Ontario for the effects of climate change.



Inset photo: GO Transit  
Background photo courtesy of Enbridge Inc.

## INVESTING IN CLEAN, GREEN ENERGY

Imagine a province that is powered by clean, renewable energy... where we enjoy healthier communities, and healthier lives... and all the benefits of new sources of employment and a stronger economy. This is part of what Ontario's future holds. We are making it a reality today.

### Highlights

- We are making major progress. **Including initiatives launched to date, Ontario anticipates that we will deliver more than 85 per cent of the reductions needed to reach our 2014 target.**
- Ontario is committed to eliminating the use of coal in electricity generation by the end of 2014. **In 2010 alone, we shut down four coal units. That's like taking up to two million cars off Ontario's roads.** It's the single largest initiative in North America to reduce greenhouse gas (GHG) emissions.
- We are expanding Ontario's use of clean, renewable energy. Investment in green energy means more growth and more good jobs for Ontarians.
- With our Green Energy Act, Ontario has attracted \$16 billion in investment in projects to produce renewable energy. The act is widely viewed as the most innovative piece of green energy legislation in North America.



Photo courtesy of Enbridge Inc.





By the end of 2012, it is estimated that the Green Energy Act will support or create up to 50,000 jobs in smart grid transmission and distribution upgrades, renewable energy, and conservation.

↑ 50,000 JOBS









## PROTECTING OUR WATER, LANDS AND FORESTS

We are taking action now to create a cleaner future for Ontario. We see a province where there is enough clean drinking water for everyone... where we maintain rich agricultural lands to grow healthy food... and, where we value, conserve and enhance the resiliency of our wetlands, forests and northern regions to a changing climate. In turn, these natural spaces can help moderate our temperatures, reduce the effects of storms, conserve soil and clean the air we breathe and the water we drink. We are working to preserve this unique legacy for all to enjoy today — and for generations yet to come.

### INVESTING IN OUR FORESTS



Ontario is committed to planting 50 million more trees by 2020 as part of the United Nations Billion Tree Campaign program. Working with conservation authorities, forestry consultants, local land owners, municipalities, we have planted almost six million trees to date under a plan to reforest marginal agricultural lands in southern Ontario.

### Highlights

- We are taking steps to encourage everyone across the province to use water more wisely. The Water Opportunities Act will help make Ontario a North American leader in technologies for water conservation and water treatment.
- We are working to protect our forests. The Far North Act includes an objective to protect at least 225,000 square kilometres of northern boreal forest and peat lands in an interconnected network of protected areas designated in community based land use plans. Ontario is also providing funding for First Nation communities in the Far North to develop sustainable land use plans. The total funding committed to support land use planning in the Far North is \$46 million. This will help us lessen and adapt to the effects of climate change.
- We are putting plans in place to protect green spaces, sensitive areas and agricultural lands. For instance, the Greenbelt Plan, along with the Growth Plan for the Greater Golden Horseshoe, will help Ontario manage the pressures of urban growth in a sustainable manner.
- We are working with farmers to apply best practices for sustainable agriculture. For crops, this includes searching for new varieties and cropping systems. For livestock, the Legislature passed the Animal Health Act in 2009. This is a key tool to prevent, detect and respond to animal health risks including those that may arise as a result of climate change.

## INVESTING IN GREEN TRANSPORTATION



Photo: GO Transit

As Ontario continues to develop a more sustainable transportation system, more people will be able to take transit, cycle, walk or drive more efficient vehicles. Over time, it will mean less traffic congestion, cleaner air, healthier communities — and, of course, fewer greenhouse gas emissions.

### Highlights

- We are investing more than \$9 billion in Metrolinx's priority rapid transit projects in the Greater Toronto Area. These projects are expected to create over 95,500 jobs.
- We are investing \$600 million in a Light Rapid Transit (LRT) project for the City of Ottawa. This project is expected to result in 20,000 person years of employment. The city also predicts the LRT project will reduce emissions of carbon dioxide, the major GHG, by about 38,000 tonnes each year by 2031. That's like taking 7,300 cars off our streets.
- We are investing \$300 million towards Waterloo Region's rapid transit proposal to improve transit in the Region. Improvements will better connect the cities of Kitchener, Waterloo and Cambridge to GO Transit services. The provincial investment is expected to create over 8,000 jobs.
- We are supporting the Air Rail Link between Toronto Union Station and Pearson International Airport. This will take 1.2 million car-trips off our roads in its first year of operation.





## GETTING READY FOR CLIMATE CHANGE

Ontario is preparing to respond to the effects of our changing climate, from flooding, heat waves and lower water levels in our Great Lakes. To get to a green and resilient future, we will need a range of solutions across all sectors of our province and, the collective action of everyone.



## WATER

Ontario is focusing on well-targeted, early planning to improve our climate resilience. We know this will likely be more effective than complex disaster relief efforts after an extreme weather event. Actions here include:

- We are updating Ontario's low-water response program to reduce the impacts of drought.
- We are taking steps to help communities identify risks to their drinking water supplies and take actions to reduce those risks.
- We are working to improve the management of wastewater and storm water.

## BUILDINGS, ROADS AND OTHER STRUCTURES

Much of Ontario's physical infrastructure was built before we started to see new weather patterns. Going forward, Ontario will consider the effects of climate change in designing and maintaining public infrastructure. Actions here include:

- We are undertaking pilot risk assessments of our public infrastructure to ensure it can withstand future weather conditions.
- We are working with partners to ensure homeowners have guidance on how to retrofit their homes to withstand the impacts of a changing climate.
- We are looking at ways to strengthen the threatened winter road system that supports Far North communities. When lower cost transport over winter roads becomes impossible, Northern communities must depend on air transport which often increases their costs.



## FARMING AND FOOD

Ontario's farmers have a long history of adapting to and meeting climate challenges. Going forward, the key is to take proactive steps *before* our food supply is affected. Actions here include:

- Undertaking new research on crops to protect plant health.
- Putting processes in place to prevent, detect and respond quickly to new disease threats for animals. This includes detecting significant wildlife diseases that may be passed to livestock.
- Supporting innovation and best practices in food production, such as water-efficient irrigation. Strong Business Risk Management (BRM) programs help farmers face the short-term risks that can affect production and profit in their businesses including risks from climate change such as extreme weather, pests and drought.



## OUR NATURAL ENVIRONMENT

We may not be able to prevent climate change from affecting this balance. But we can strengthen the ability of our natural world to adapt and respond. Actions here include:

- Monitoring and working to protect our diverse wildlife species. We are also supporting the recovery of threatened and endangered species. In 2011 we will update Ontario's Biodiversity Strategy to include the expected effects of climate change and measures needed to help wildlife adapt.
- Maintaining and expanding our parks and conservation areas.
- Assessing the health of our forests and fisheries to determine actions needed. For instance, researchers are examining tree genetics and the adaptive capacity of tree species to determine how these trees respond to increasing temperature and concentrations of carbon dioxide.
- Adding the impact of climate change into our Great Lakes Agreements. The state of the Great Lakes is critical to the health, economy and natural beauty of Ontario.





## HEALTH

Changing climate affects human health in many ways. Extreme weather such as heat waves, high winds and poor air quality can cause serious health issues for Ontarians. So does the increased presence of infectious diseases such as Lyme disease. At the community level, the Government of Ontario continues to work with public health units to ensure they have the tools to protect us from health risks due to climate change. Actions here include:

- Educating the public about the hazards of climate change, such as incidence of increased Lyme disease.
- Developing tools to help us assess at-risk citizens during heat waves.



## COMMUNITIES

Our communities put in place by-laws and official plans. They make spending decisions about our infrastructure. They create emergency response plans. They protect our drinking water. All of these decisions made at the local level need to consider the risks posed by climate change. Actions here include:

- Updating the Provincial Policy Statement, which provides direction on land use planning and development.
- Investing in building capacity in communities to understand the realities of a changing climate and plan better for its impacts.
- Developing a Growth Plan for Northern Ontario and Far North land use planning.

## THE NEXT THREE YEARS

Climate change is a global challenge, requiring large-scale solutions backed by both the government and private sectors. Yet it is also a challenge that starts in every home in every community — and calls for small, everyday actions by each and every one of us.

The next three years will be critical. Ontario has set two very challenging targets for 2014:

- Eliminate coal-fired electricity generation.
- Reduce greenhouse gas emissions six per cent below 1990 levels by 2014.

One thing is clear: our future, and the future of every living being in Ontario, is in our hands. So are the solutions to the challenges we face. With courage, innovation and purposeful action, we can — and will — create a stronger, cleaner Ontario.

This is the challenge of our time — and the legacy we can leave for generations to come.



## LEARN MORE

Learn more about Ontario's efforts to address climate change by visiting **[ontario.ca/climatechange](https://ontario.ca/climatechange)** to read:

- [Climate Progress: Ontario's Plan for a Cleaner, More Sustainable Future](#)
- [Climate Ready: Ontario's Adaptation Strategy and Action Plan](#)
- [Climate Action: Adapting to Change, Protecting Our Future](#)